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## A clinicopathological prospective case study of carcinoma penis

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### Abstract

**Background:** Penile cancer is an unusual malignancy with higher incidence rates in developing countries like India when compared to the Western world. Hence we selected this study to analyze various clinical and pathological aspects of carcinoma penis in our region.

**Aims and Objectives:** To study in detail the clinical presentation, stage of the disease, management and results of the patients presenting with carcinoma of the penis at our hospital.

**Materials and Methods:** This is a prospective case study of 47 Cases of Carcinoma Penis, admitted to the surgical wards of Government General Hospital, Guntur, Andhra Pradesh, India from June 2009 to November 2011.

**Results:** The age incidence of carcinoma of penis in this study was between 40 to 70 years (79%). Majority were uncircumcised Hindus (91%). Ulcerative and proliferative growths were predominant (83%). Phimosis was present in 18% of cases. Half of the patient population presented late. 81% were smokers. Glans penis was the commonest site (60%). Well differentiated squamous cell carcinoma was commonly seen at biopsy. In half of the patients lymph nodes were not palpable whereas secondary deposits were seen in 15% of palpable lymph nodes at presentation. Partial penectomy either alone or along with radical inguinal lymphadenectomy was the commonest procedure performed. Postoperative complications were seen in 19% of cases. 19% were lost to follow-up.

**Conclusion:** Carcinoma penis is common in uncircumcised, elderly, Hindu smokers in this part of the state with majority of the patients approaching late after the onset of their symptoms. Partial amputation of the penis is applicable to more than 50% of cases.

**Keywords:** Carcinoma penis, partial amputation of penis, inguinal lymphadenopathy, inguinal lymphadenectomy

### Introduction

Carcinoma of penis is primarily a disease of poor countries and is mostly common in low socioeconomic group with poor personal genital hygiene. It is common in Indian Hindus, who do not practice circumcision during infancy.

Although many etiological factors have been implicated in carcinoma penis, human Papilloma virus, phimosis and many pre malignant conditions are implicated in its causation. The condition can be prevented by taking prophylactic measures such as cleaning the prepuce regularly. Ritual circumcision when performed soon after birth confers almost total immunity against carcinoma of penis.

The management of primary lesion by either partial penectomy or total penectomy is fairly standardized, but there is still some controversy in the management of lymph nodal metastases.

Patients with penile carcinoma and palpable lymphadenopathy requires control of the primary tumor, followed by re-evaluation of the inguinal nodes 2 to 6 weeks after the nodal inflammatory response from infection has been controlled with antibiotics. The interval for antibiotic treatment not only serves to permit more accurate assessment of the cause of lymphadenopathy (inflammatory versus neoplastic), but also markedly reduces the potential for postoperative morbidity secondary to wound infection.

The prognosis of patients with carcinoma of the penis is markedly worsened by the presence of inguinal lymph nodal metastases. This finding affects the prognosis of the disease more than tumor grade, gross appearance, or morphological and microscopic patterns of the tumor. Nodal metastases are more frequently associated with high-grade lesions or invasive histology. 47 cases of Carcinoma of Penis were admitted to Government General Hospital, Guntur,

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Andhra Pradesh, India, during the period from December 2009 to October 2011. The cases were taken up for detailed clinical study including factors like incidence, salient complaints, etiological factors, postoperative management details and follow up to represent broad spectrum of this disease.

**Aims and Objectives**

**Aim of the study**

To study in detail the clinical presentation, stage of the disease, management and results of the patients presenting with carcinoma of the penis to our hospital during the period from December 2009 to October 2011.

**Objectives**

1. To study the mode of presentation, age distribution and etiological factors of Carcinoma Penis.
2. To study the type and stage at presentation of penile cancer disease in this area.
3. To estimate the incidence of nodal metastasis in this area.
4. To evaluate the results of different methods of management in penile cancer disease.
5. To evaluate whether carcinoma of the penis in this part of the state differs from that of others.

**Materials and Methods**

This is a prospective case study of 47 Cases of Carcinoma Penis, admitted in the surgical wards of Government General Hospital, Guntur from June 2009 to November 2011.

**Inclusion criteria**

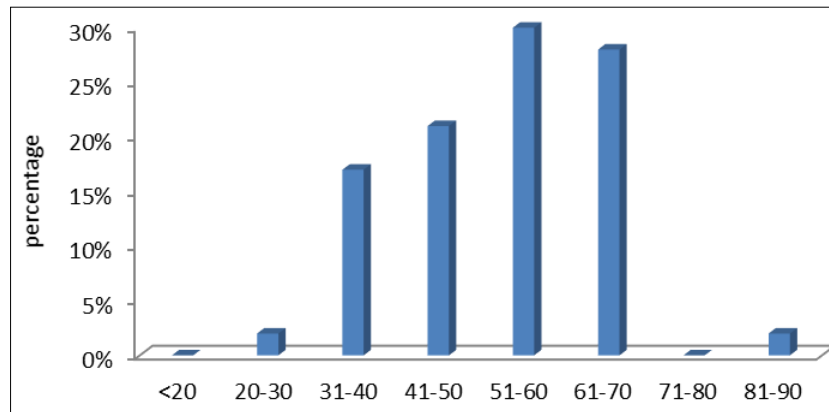
- Patients presenting with complaints of ulcer/Ulcerated growth over the penis.
- Penile ulcerated lesions associated with inguinal lymphadenopathy.
- Recent onset of phimosis with purulent, blood stained discharge in elderly.
- Histologically proven malignancy.

**Exclusion criteria**

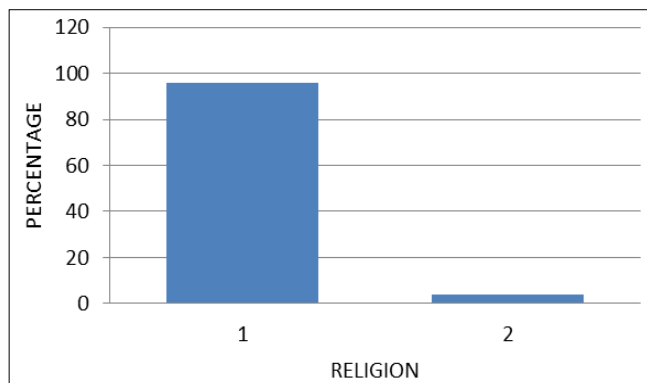
- Benign cutaneous and non-cutaneous lesions of penis.

A detail history was obtained. Diagnosis was arrived by thorough clinical examination and wedge biopsy from edge of the ulcer along with normal representative area. Routine blood investigations, viral screening tests, X – ray chest, ultrasound abdomen were done. Patients with doubtful enlarged inguinal lymph nodes were subjected to FNAC. After clinical staging all the patients were subjected to surgery depending on their stage of the disease. The Inguinal lymph nodes were treated according to their merits and FNAC findings. The patients were followed up for a period ranging from 6 months to 2 years, and the results were analyzed according to the following parameters – age of occurrence, smoking, phimosis, duration of symptoms, site of occurrence, type of the lesion, histopathology, clinical stage, inguinal lymphadenopathy, FNAC of inguinal lymph nodes, type surgery, post-operative complications, and recurrence.

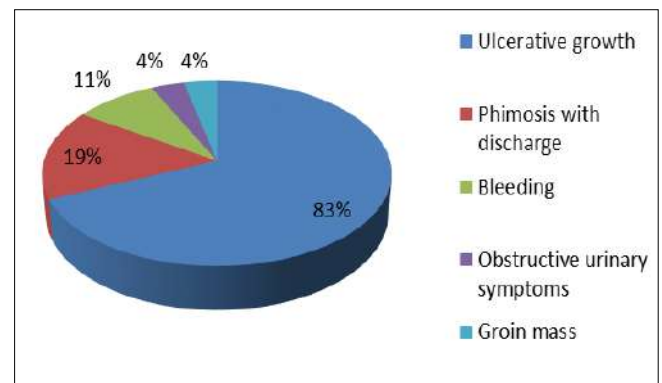
**Results**



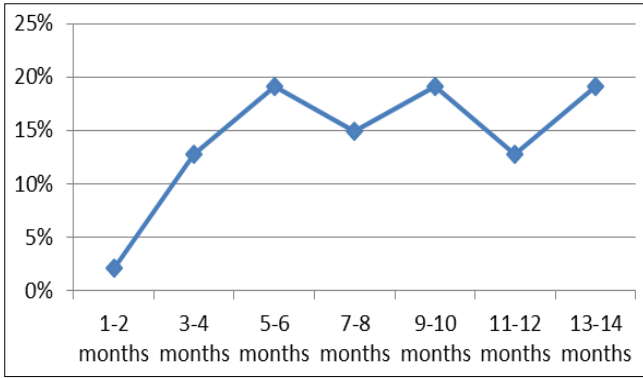
**Fig 1: Age incidence**



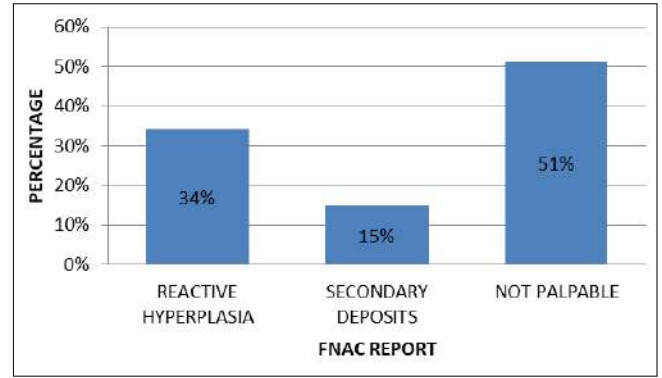
**Fig 2: Religion- cacinoma penis**



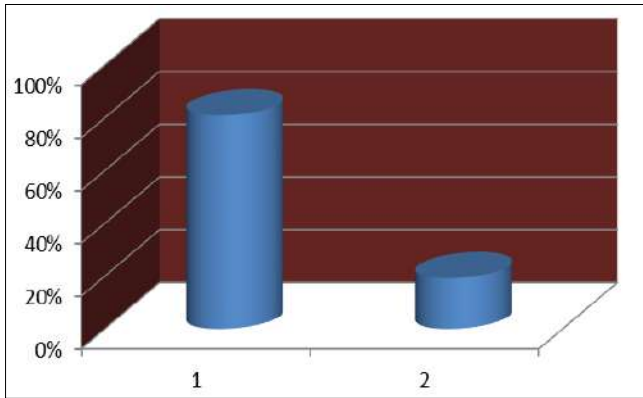
**Fig 3: Presenting symptom**



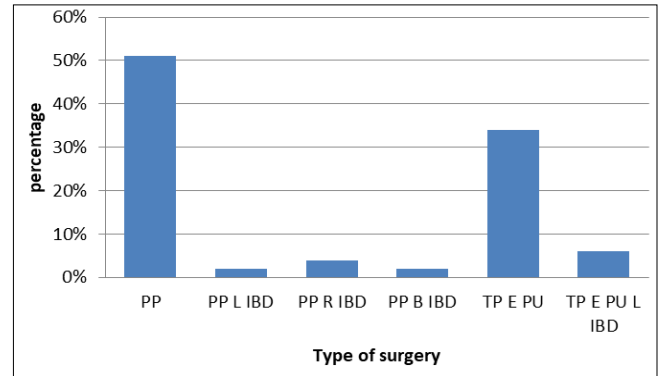
**Fig 4:** Duration of disease



**Fig 8:** FNAC of inguinal lymph nodes

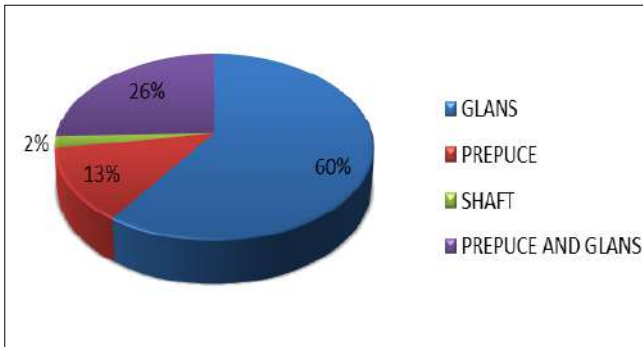


**Fig 5:** Incidence of smoking

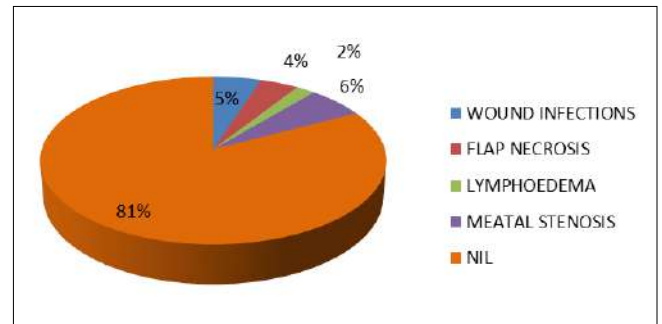


**Abbreviations:** PP – Partial penectomy, PP L IBD – Partial penectomy + Left inguinal block dissection, PP R IBD - Partial penectomy + Right inguinal block dissection, PP B IBD – Partial penectomy + Bilateralinguinal block dissection, TP E PU – Total penectomy + emasculation + Perinealuretostomy, TP E PU L IBD – Total penectomy + Emasculation + Perinealuretostomy + Left inguinal block dissection

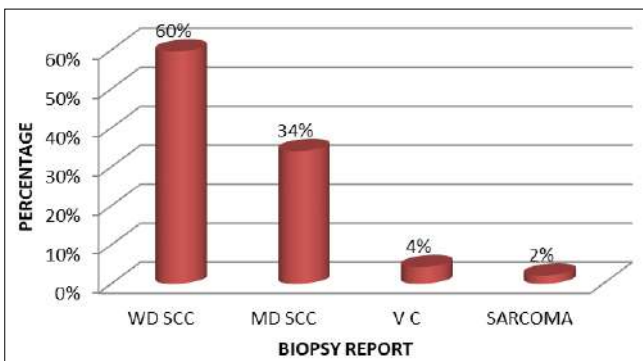
**Fig 9:** Type of surgical treatment



**Fig 6:** Site of lesion

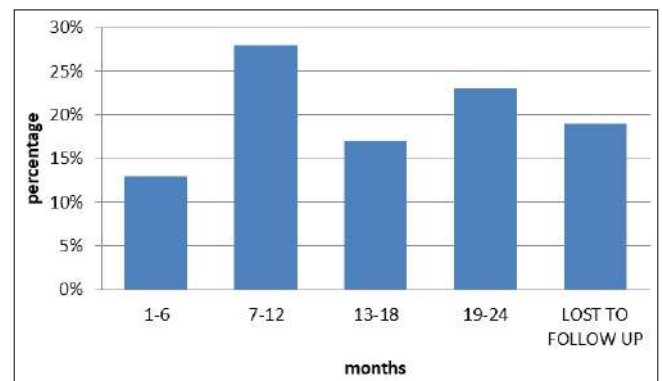


**Fig 10:** Post-operative complications



WD SCC – Well differentiated squamous cell carcinoma  
 MD SCC – Moderately differentiated squamous cell carcinoma  
 VC – Verucous carcinoma

**Fig 7:** Biopsy report



**Fig 11:** Follow up

## Discussion

The incidence of carcinoma of the penis is reported as 19 per 100,000 population in Asia, Africa [1, 2] and South America in comparison to developed countries where it is 1 per 100,000 population [3, 4]. This is reflected in this series wherein 47 cases of carcinoma penis could be studied in 2 years. The study material does not represent the true incidence in population at large because ours is a tertiary referral center in this part of state in which 47 cases were seen.

Penile cancer is a disease of older men with abrupt increase in 6<sup>th</sup> decade of life [5]. The mean age of occurrence of penile cancer in this study is 50-70 years which coincides with the literature [6]. Even younger men are not spared as evidenced by 19% of men less than 40 years in this study.

Many etiological factors and pre malignant lesions are found to be associated with penile cancers. The incidence varies according to circumcision practice, hygienic standards, phimosis, number of sexual partners, HPV infection and exposure to tobacco products. Due to lack of viral sampling lab facilities to detect HPV infection its role in carcinoma penis cannot be commented in this study. The chronic irritation effects of smegma, a byproduct of bacterial action on desquamated cells that are within prepuccial sac has been proposed as an etiological agent. Improper hygiene leads to accumulation of smegma beneath the prepuccial skin, leading to inflammation and fibrosis resulting in phimosis. The incidence of phimosis in this study of 19%, seems to correlate with 25-75% described in most large series in the literature [7].

81% of patients were smokers in this study. Harish and Ravi, (1995) [8] showed that all forms of tobacco products were significantly and independently related to the incidence of penile cancer on multivariate regression analysis. Most of the patients in this study were Hindus who do not practice circumcision as a routine [9]. Urethral involvement is rare in the natural history of penile cancer [10]. The obstructive urinary symptoms found in this group were chiefly due to associated phimosis and not due to urethral involvement. Distant metastasis is reported in 1 to 10% as evidenced by the absence of distant metastasis in this study.

As expected the common mode of presentation of penile cancer is a penile lesion with a foul smelling discharge. Phimosis may obscure the lesion requiring dorsal slit, as seen in 9 cases of our study. Glans penis in 60% and prepuce and glans in 26% are the common sites of occurrence of in this study, correlating with that in the literature [11]. Presentation with mass, ulceration, hemorrhage in the inguinal area is rare, as evidenced in 1 patient in this study, who presented with adherent mass of inguinal lymph nodes.

15-50% of patients with carcinoma of penis sought medical help late (more than 1 year) [6, 12] (Dean 1935, Glursel *et al.* 1973) [12]. Explanation for this includes embarrassment, guilt, fear, ignorance and personal neglect. This results in poorer treatment outcomes. In this study also, 19% cases approached for treatment late, one year after the onset of their symptoms.

Histological finding of well differentiated and moderately differentiated squamous cell carcinoma in this study matches with the literature i.e. 94%. Secondary's to penis is extremely rare. Only 1 case in this series had a deposit from osteosarcoma. Palpation and wedge biopsy were used in staging primary lesion, while inguinal lymphadenopathy when present was assessed by FNAC (false negative rate was 20-30%) [13]. Sentinel node biopsy as described by Cabana is not recommended as this has false negative rates as high as 25%, as in FNAC. However, when lymph node is suspicious and FNAC is negative, an open

biopsy in low grade tumors or superficial inguinal dissection is recommended. Due to non-availability of radionuclide facilities dynamic sentinel node biopsy [14] was not done. Depending on size of the tumour, T stage, patient reliability to come for follow up, local treatment for penile cancer was decided.

Inguinal lymph nodes were palpable in 49% of cases in our study. Only 30% of them had secondaries, unlike in the literature where 50% of palpable lymph nodes at diagnosis were positive for metastasis. However 100% lymph nodes that appear during follow up are metastatic. The higher incidence of reactive hyperplastic nodes can be correlated in this study with poor socio economic status, poor genital hygiene and bare foot walking in many of our patients coming from villages.

Since large T1, T2 lesions are the commonest types of cancer penis in this population as in literature, partial or total amputation of penis according to tumour extent was considered. Partial amputation of penis is the commonest operation performed in our patients with carcinoma penis (T1 G3, T2) accounting to 60%. The indication for total amputation is same as in the literature i.e., when sufficient stump cannot be left behind.

Lymphadenectomy requires careful assessment of groin and evaluation of prognostic factors for positive lymph nodes. Low risk group (negative groins) were on surveillance as the risk metastasis is less than 16.5%. In others we have decided the need for lymphadenectomy based on FNAC findings. In high risk group (T3 G3 lesions) radical inguinal lymphadenectomy is recommended. For palpable bilateral lymph nodes [18] with positive histology, bilateral radical ilioinguinal lymphadenectomy is recommended. We had one such patient in this series.

In one of our patient, fixed inguinal lymph node mass was present at presentation. Induction chemotherapy followed by radiotherapy was given initially followed by treatment of primary lesion. Chemotherapy [19, 20]. Using 5-Fluorouracil, Cisplatin, Methotrexate, Bleomycin was tried in this patient with stage 3 disease (T2 N3) with partial clinical response. This was supplemented later by radiotherapy.

Follow up is crucial in order to achieve good survival benefit. Most of the recurrences were reported within 2 years [21]. In our study majority of patients are from rural areas and were poor, only 40% cases could be followed for 2 years. This makes interpretation of results difficult in our study.

## Conclusions

Carcinoma penis was common in uncircumcised, elderly, Hindus and smokers in this part of the state. Majority of the patients approached late after the onset of their symptoms. Chronic ulcer or proliferative growth over the were was the commonest type of presentation. Well differentiated squamous cell carcinoma was the common histological variety. Majority of the patients belonged to either stage 2 or stage 3 diseases (TNM). Half of the patients had inguinal lymphadenopathy in which secondary deposits were found in only 15%. More than half of the patients were treated with partial amputation of the penis, either alone or along with inguinal lymphadenectomy. Reactive lymph nodal hyperplasia is more commonly seen in our study than secondary lymph nodal deposits at presentation.

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